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(71) Applicant (for all designated States except US): TAKASAGO INTERNATIONAL CORPORATION [JP/JP]; 37-1, Kamata 5-chome, Ohta-ku, Tokyo 1448721 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): AMANO, Akira [JP/JP]; c/o Central Research Laboratory of TAKASAGO INTERNATIONAL CORPORATION, 4-11, Nishiyawata 1-chome, Hiratsuka-shi, Kanagawa 2540073 (JP). IGARASHI, Daisuke [JP/JP]; c/o Central Research Laboratory of TAKASAGO INTERNATIONAL CORPORATION, 4-11, Nishiyawata 1-chome, Hiratsuka-shi, Kanagawa 2540073 (JP). SAYO, Noboru, [JP/JP]; c/o Central Research Laboratory of TAKASAGO INTERNATIONAL CORPORATION, 4-11, Nishiyawata 1-chome, Hiratsuka-shi, Kanagawa 2540073 (JP).

(74) Agent: SAEKI, Norio; 9th Floor, Taka-ai Building, 15-2, Nihonbashi 3-chome, Chuo-ku, Tokyo 1030027 (JP).

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(54) Title: METHOD FOR PRODUCING OPTICALLY ACTIVE CARBOXYLIC ACID

(57) Abstract: A method for producing a desired optically active carboxylic acid with a high optical purity, wherein a complex catalyst used can be recovered and reused as an aqueous solution. The method contains the step of subjecting an &agr;,&bgr;-unsaturated carboxylic acid in water or a mixed solvent of water and a water-insoluble organic solvent in the presence of a sulfonated BINAP-Ru complex represented by the formula [3]: [RuX(arene){(SO₃M)2BINAP}]X [3] wherein X represents a chlorine atom, a bromine atom or an iodine atom, arene represents a benzene or an alkyl-substituted benzene, M represents an alkaline metal atom, and BINAP represents 2,2'-bis(diphenylphosphine)-1,1'-binaphthyl to an asymmetric hydrogenation. The sulfonated BINAP-Ru complex can be recycled.